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NEW SUBSPECIES OF THE GRAY FOX AND SAY'S CHIPMUNK.

BY SAMUEL N. RHOADS.

Urocyon cinereo-argenteus floridanus subsp. nov. Type, yg. ad. ♂, No. 1,837, Col. of S. N. Rhoads. Tarpon Springs, Florida. Col. by W. S. Dickinson, Dec. 1894.

Description.—Smaller than *cinereo-argenteus* of the Middle States, with relatively shorter hind foot, tail, and ears, and harsher pelage. Skull characters not appreciably different from the typical form. Crown from between eyes (including space between ears and eyes to black malar stripe), upper neck, back, rump, sides, upper surfaces of legs and feet mixed silver-gray, much as in the northern animal. Chin, margin of lips, whisker patch, upper line and tip of tail and an indistinct double stripe reaching from the nose through and under eyes and joining on cheeks, black. Hind ears, sides of neck to fore-legs, broad band across throat and under surface of foreleg rusty brown. Throat and cheek-stripe, from anterior canthus of eye, white. Anterior upper lip adjoining muzzle, brownish-white. Breast, belly, vent, inner surfaces of hams and inner base of fore-legs pale rusty fulvous, a few grayish-white hairs near vent. Soles of feet cinnamon, with dusky borders.

Measurements (of type, taken from dry skin).—Total length, 900 mm.; hind foot, 125; tail vertebrae, 260; ear, from crown, 60: (Of old, adult topotype; length, 910; foot, 125; tail, 310; ear, 63). Skull—Total length, 114; basilar length, 103; zygomatic expansion, 65; interorbital expansion, 35; length of nasals, 41; length of mandible, 86; width of mandible, 33.

Two specimens, male and female, from the vicinity of Tarpon Springs, one in winter and the other in summer pelage, show such well-marked differences from the Gray Fox of Virginia and the Middle States, I feel no hesitation in considering them sufficient indication that the fox of southern Florida should be separated from the northern animal.

Besides the difference in dimensions already stated in the description, the Florida fox may be recognized by the paleness of the fulvous color of breast and belly and by the almost entire absence of white on these parts so conspicuous in specimens from Virginia and New

Jersey. It lacks entirely the white stripe on the inside of hind legs, and the rusty throat patch is much longer (3 or 4 inches) than in *cinereo-argenteus*, in which it often forms a narrow collar scarcely dividing the white of lower head and throat from that of breast.

As I have already pointed out,¹ priority in naming the Gray Fox belongs to Müller, who described it in 1776. Probably in the same year a plate of this animal had been published by Schreber (Saugthiere, Tab. XCII), on which he used the name "*Canis cinereo-argenteus* Briss." The text belonging to the volume (Band III) in which this plate was bound bears the date 1778. In the text Schreber nowhere imposes the Latin name because of his expressed doubt whether "Der Grisfuchs" might not be the same as "Der Virginische Fuchs," which he named *Canis virginianus*. It is, therefore, apparent that *cinereo-argenteus* was not adopted by Schreber but was merely quoted on the plate to denote the animal which he considered the same as the *Canis cinereo-argenteus* of Brisson. Schreber's plate of Der Virginische Fuchs is copied from the preposterous one of Catesby, while that of Der Grisfuchs is not a bad representation of the Gray Fox, and his description of the animal (pp. 360, 361) is the first accurate one published, in fact it would be hard to find a more reliable diagnosis of the external characters of the northern form than this of Schreber's, taken from a furrier's pelt, sent from America to Germany.

Returning to Müller's description we find the additional statement that his *Canis cinereo-argenteus* is based on Brisson's animal as well as on Schreber's plate above mentioned, but he gives no habitat. Brisson (*Règne Animal*, 1756, p. 241) gives it: "Habitat in Carolina, & Virginia in cavis arboribus." The Gray Foxes which I have examined from North Carolina and Virginia are essentially like those of the Middle States, and it is therefore proper to apply Müller's name to the northern as contrasted with the extreme southern form. It is probable that there is little intergradation between the two, north of southern Georgia and that typical *floridanus* is confined to peninsular Florida, as is the case with other mammals in these regions having the same distribution.

Tamias lateralis saturatus subsp. nov. Type, ad. ♂, Col. of S. N. Rhoads, No. 1,365. Lake Kichelos, Kittitas Co., Washn. (elevation 8,000 ft.). Col. by Allan Rupert, Sep., 1893.

Description.—Size large, tail very long, foot and ear in the same

¹ Reprint of Ord's *Zoology*, 1894, Appx., p. 8.

proportion, colors darkest of the *T. lateralis* group. Top and sides of head and sides of neck to and including forelegs, chestnut, shaded with black; eyelids pale buff, in marked contrast to their surroundings; lips, throat, breast, sides of belly and hams, rusty; feet paler rusty; back, from occiput to and including root of tail and defined laterally by red of neck and black of inner body stripe and posteriorly by white of middle stripe, including flanks and upper hind legs, grizzled, rusty black. White body stripe longest, reaching from base of neck nearly to tail; inner black stripe shortest, about half the width and length of outer stripe, which latter is the same width as white stripe, and about two-thirds as long. Belly and chest uniform grizzled black, the bases of hairs sooty, their tips fulvous. Tail, above, like back on proximal third, becoming more distinctly margined with a subterminal black band which becomes broader and blacker at tip, the outer tips of hairs rusty; beneath, the tail is lighter, with a broad central area of reddish-yellow within the black border. Skull, not appreciably different from that of *lateralis*, except in its larger size.

Measurements (of type, in millimeters).—Total length, 317; tail vertebrae, 114; hind foot, 46: (Average of five adults, length, 305; tail, 112; foot, 46). Skull—Total length, 46; basilar length, 38; zygomatic expansion, 28.8; interorbital constriction, 12; length of nasals, 15.7; length of mandible, 28; width of mandible, 16.2.

Seventeen chipmunks, taken by Mr. Rupert in the months of July and September, in the vicinity of Snoqualmie Pass, Cascade Mts., Washington, show closest affinities, in many respects, with *T. lateralis cinerascens*² in the "red phase" described by Dr. Merriam. They differ from *cinerascens* in the fact that there is no "gray phase," the adults of both sexes being similarly colored. They are also blacker and browner throughout and have a relatively smaller body, larger foot, and longer tail than *cinerascens*, and the median lateral stripe does not reach the ears as in that form and in *lateralis*.

The very close agreement of the skulls of *lateralis* and *saturatus* indicates that the latter is nothing more than the usual "Cascade representative" of a Rocky Mountain type, and it is probable that the relationship of *cinerascens* to *lateralis* is quite as close.

² Merriam, N. Amer. Fauna. No. 4, 1890. 20.